COCKTAIL TABLE

centuri inc.

MANUAL NO. 901-2159

TimePilot©

SERVICE MANUAL

TIME PILOT

Cocktail Manual

CENTURI, INC.

245 W. 74TH PLACE

HIALEAH, FLA. 33014

CUSTOMER SERVICE:

TEL. #(305) 558-5200 (IN FLORIDA)

TEL. #(800) 327-7710 (OUTSIDE FLORIDA)

TELEX: 803694 ANSB CENTURI CABLE: CENTURI

"TIME PILOT" COCKTAIL TABLE

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USER INFORMATION - F.C.C.

WARNING

THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY, AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE INTERFERENCE TO RADIO COMMUNICATIONS. AS TEMPORARILY PERMITTED BY REGULATION, IT HAS NOT BEEN TESTED FOR COMPLIANCE PURSUANT TO SUBPART J OF PART 15 OF F.C.C. RULES, WHICH ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST SUCH INTERFERENCE. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE INTERFERENCE IN WHICH CASE, THE USER AT HIS OWN EXPENSE WILL BE REQUIRED TO TAKE WATEVER MEASURES MAY BE REQUIRED TO CORRECT THE INTERFERENCE.

INTRODUCTION

"T.PILOT" IS A MICROPROCESSOR BASED COIN-OPERATED ELECTRONIC GAME, THAT MAKES EXTENSIVE USE OF DIGITAL INTEGRATED CIRCUITRY AND TELEVISION MONITOR CONCEPTS. THIS MANUAL IS DESIGNED FOR THE USE OF MAINTENANCE TECHICIANS WHO POSSESS A GENERAL WORKING KNOWLEDGE OF SOLID-STATE CIRCUITRY, AND VIDEO MONITOR THEORY. ANY INDIVIDUAL NOT KNOWLEDGEABLE IN THESE AREAS SHOULD NOT ATTEMPT REPAIR OF THE ELECTRONIC PORTIONS OF THE GAME.

IN ADDITION TO THIS MANUAL AND TRAINING IN ELECTRONICS, TROUBLE-SHOOTING AND REPAIR WILL BE FACILITATED BY ACCESS TO GENERAL-TYPE HANDTOOLS, A MULTIMETER, A 50 OR 100 MHZ OSCILLOSCOPE AND A LOGIC PROBE WOULD BE HELPFUL.

TECHNICAL ASSISTANCE IS AVAILABLE BY CALLING (305) 558-5200. QUESTIONS OR COMMENTS CONCERNING "T.PILOT" OR ANY OF OUR GAMES ARE WELCOME AND SHOULD BE DIRECTED TO:

CENTURI, INC.

CUSTOMER SERVICE DEPARTAMENT
#800-327-7710 (OUTSIDE THE STATE OF FLA.)
#305-556-5888 (IN FLORIDA)

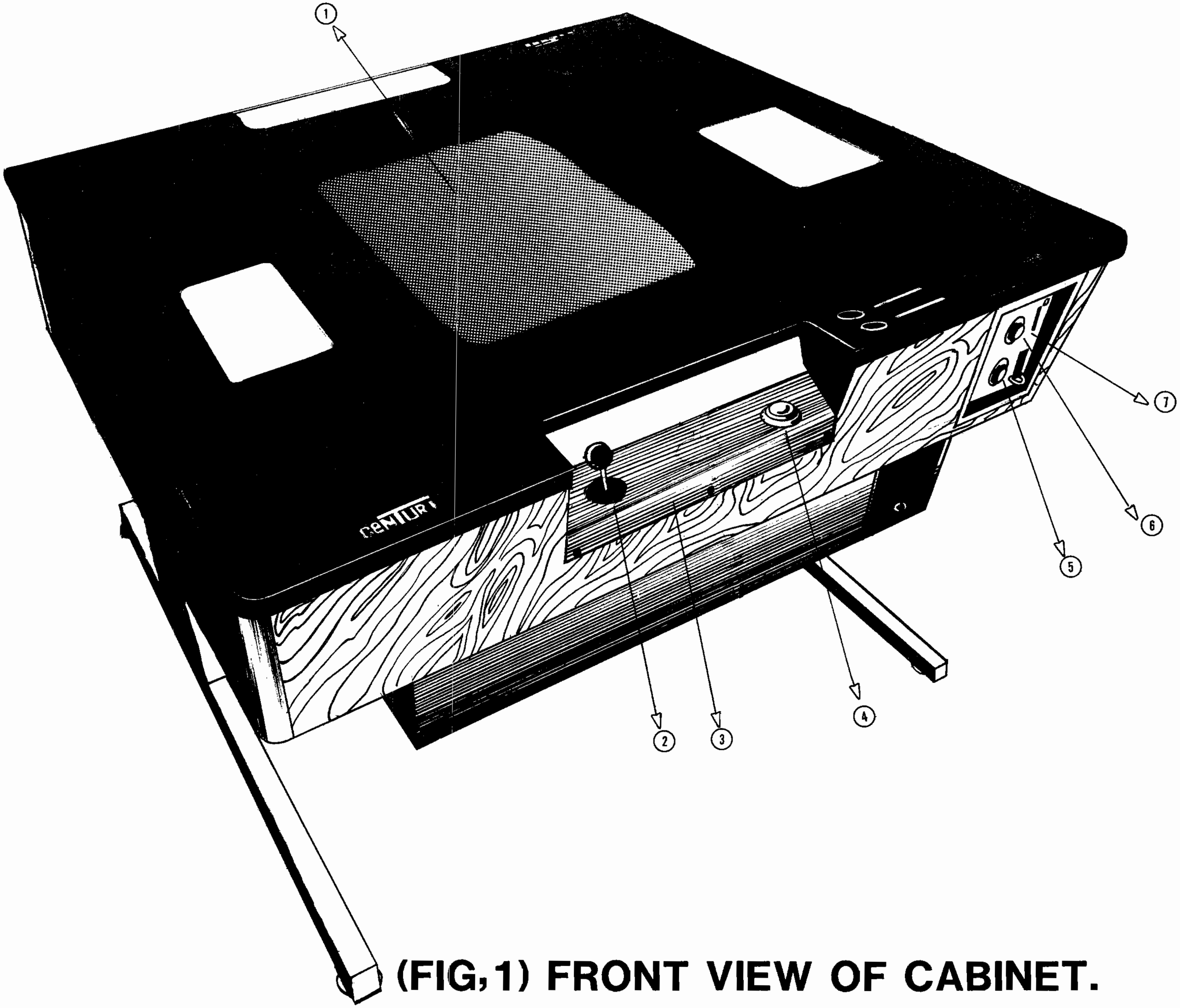
NOTES

NEVER REPLACE ANY COMPONENTS WITH ANYTHING OTHER THAN EXACT REPLACEMENT PARTS.

NEVER REMOVE CIRCUIT BOARD CONNECTIONS WHILE POWER IS ON.

DO NOT REPLACE THE FUSE WITH ANYTHING OTHER THAN THE PROPER VALUE. A BLOWN FUSE INDICATES AN OVERLOAD CONDITION WITHIN THE GAME. REPLACING THE FUSE WITH A HIGHER VALUE CAN CAUSE SEVERE DAMAGE TO INTERNAL COMPONENTS IF AN OVERLOAD OCCURS.

ALWAYS CONSULT THE MANUAL BEFORE ATTEMPTING REPAIRS.



(FIG,1) FRONT VIEW OF CABINET.

"TIME PILOT" CABINET, COCKTAIL TABLE

(FIGURE 1)

PARTS LIST

ITEM	CENTURI P/N:	DESCRIPTION:
1.	802-3104	TOP GLASS SILKSCREENED
2.	702-1201	GSI-8 POSITION JOYSTICK ASSY
3.	301-2517	CONTROL PANEL
4.	--------	FIRE BUTTON
5.	--------	2-PLAYER START BUTTON
6.	--------	1-PLAYER START BUTTON
7.	009-4683	COIN ACCEPTOR/START SW. ASSY

"TIME PILOT"

GAME DESCRIPTION

Continuing with its policy of producing high quality games, Centuri, Inc. adds to its successful line, "TIME PILOT."

Centuri incorporates into this game all the elements of sight and sound necessary to attract a player of any skill level.

The player controls his plane with the 8 way joystick and shoots at the enemies using "Fire" button. "TIME PILOT" consists of 5 different rounds of play which are as follows:

ROUND 1:

A.D. 1910 - The age of Biplane

The attackers are biplanes coming from random directions. Enemy plane shoots at your plane and throns, hand grenades when close to you. After 56 biplanes are destroyed, the "Mother-Ship" appears: a giant airballoon shooting at you! Only 7 hits will destroy the "Mother-Ship." During the same stage, one to five parachutes will appear. Dock with them for bonus points.

ROUND 2:

A.D. 1940 - The age of Monoplane

Enemies are: monoplane fighters, middle size bombers and large bomber ("Mother-Ship"). Middle size bombers are aiming constantly at your plane! It could be destroyed by 4 hits and awards 1,500 points.

ROUND 3:

A.D. 1970 - The age of Helicopter

Enemies now are helicopters and large one ("Mother-Ship"). As a new level of difficulty, the helicopters are using homing missiles.

ROUND 4:

A.D. 1982 - The age of Jetplane

The enemies are modern jet fighters shooting and launching homing missiles. A modern large jet bomber is the "Mother-Ship." This is one of the most difficult rounds of the game due to increased speed of jet fighters and random direction attacks.

ROUND 5:

A.D. 2001 - The age of U.F.O.

Hard to be reached and very hard to be passed. Great number of U.F.O.'s are attacking from any direction changing their angles of attack and throwing at your plane two types of "Alien Weapons." The stage is fast paced and the "Mother-Ship", a superfortress U.F.O., can not be so easily destroyed.

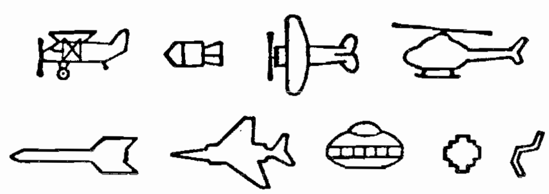
The next, Round 6, is identical with Round 1, but the number of planes attacking you, the speed and number of shots and grenades are gradually increased.

"TIME PILOT" continues with Round 7, 8, ... making your mission harder and harder. The game is all over when all your planes are destroyed.

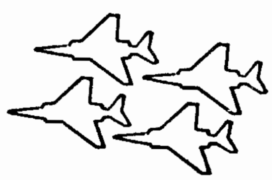
GAME INSTRUCTIONS

1. Control your plane with joystick. Avoid being hit by bullets, bombs and missiles. Do not crash into enemy planes.
2. Advance to next stage by destroying 56 enemies and 7 hits on "Mother Ship."
3. Dock with parachutes for bonus points.
4. Bonus plane after 10,000 points, 60,000 points and each additional 50,000 points.
5. Game over when all your planes are destroyed.

SCORING



100 PTS. EACH



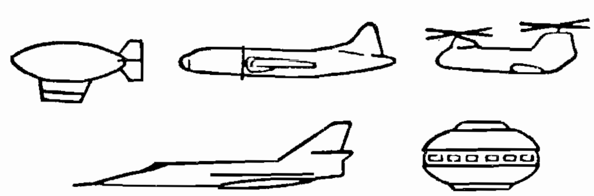




ENEMY FORMATION 2,000 PTS.

MIDDLE-SIZE BOMBER 1,500 PTS.

PARACHUTIST
1st 1,000 PTS.
2nd 2,000 PTS....ETC.



MOTHER-SHIPS 3,000 PTS.

DIP SWITCH SETTINGS

The following Dip Switches for the Game "TIME PILOT" are found on the C.P.U. Board. The settings are a guide in selecting optional game format.

DIP 1 SW SET

1 COIN 1 SW SET

SW	1	2	3	4	COIN	PLAY
	OFF	OFF	OFF	OFF	1	1
	ON	OFF	OFF	OFF	1	2
	OFF	ON	OFF	OFF	1	3
	ON	ON	OFF	OFF	1	4
	OFF	OFF	ON	OFF	1	5
	ON	OFF	ON	OFF	1	6
	OFF	ON	ON	OFF	1	7
	ON	ON	ON	OFF	2	1
	OFF	OFF	OFF	ON	2	3
	ON	OFF	OFF	ON	2	5
	OFF	ON	OFF	ON	3	1
	ON	ON	OFF	ON	3	2
	OFF	OFF	ON	ON	3	4
	ON	OFF	ON	ON	4	1
	OFF	ON	ON	ON	4	3
	ON	ON	ON	ON	FREE PLAY	

2 COIN 2 SW SET

SW	5	6	7	8	COIN	PLAY
	OFF	OFF	OFF	OFF	1	1
	ON	OFF	OFF	OFF	1	2
	OFF	ON	OFF	OFF	1	3
	ON	ON	OFF	OFF	1	4
	OFF	OFF	ON	OFF	1	5
	ON	OFF	ON	OFF	1	6
	OFF	ON	ON	OFF	1	7
	ON	ON	ON	OFF	2	1
	OFF	OFF	OFF	ON	2	3
	ON	OFF	OFF	ON	2	5
	OFF	ON	OFF	ON	3	1
	ON	ON	OFF	ON	3	2
	OFF	OFF	ON	ON	3	4
	ON	OFF	ON	ON	4	1
	OFF	ON	ON	ON	4	3
	ON	ON	ON	ON	FREE PLAY	

DIP 2 SW SET

3 THE NUMBER OF PLANES

SW	1	2	NUMBER
O	OFF	OFF	3
	ON	OFF	4
	OFF	ON	5
	ON	ON	256

4 TYPE OF GAME

SW	3	TYPE
	OFF	TABLE
	ON	UP RIGHT

5 BONUS SET

SW	4	BONUS POINT
O	OFF	10,000 Pts. and after every 50,000 Pts.
	ON	20,000 Pts. and after every 60,000 Pts.

6 DIFFICULTY OF THE GAME SET

SW	5	6	7	
	OFF	OFF	OFF	1 (VERY EASY)
	ON	OFF	OFF	2 (EASY)
	OFF	ON	OFF	3
O	ON	ON	OFF	4
	OFF	OFF	ON	5
	ON	OFF	ON	6
	OFF	ON	ON	7 (DIFFICULT)
	ON	ON	ON	8 (VERY DIFFICULT)

7 MUSIC IN ATTRACTIVE MODE

SW	8	MUSIC IN ATTRACTIVE
O	OFF	OFF
	ON	ON

O NORMAL SETTING

INSTALLATION

Your game was shipped from the factory in ready-to-play condition. A brief inspection is suggested before the machine is removed from the carton. If there is damage to the shipping carton, contact the freight carrier for claim purposes. External damage could indicate possible damage to the cabinet and/or electronics components.

After the carton has been satisfactorily inspected, remove the machine from the shipping carton.

Examine the interior of the game for disconnected wires, cables, or harnesses. Make sure the electronic devices are securely mounted in their sockets, etc. Record the game serial number, since it will be required for reference and servicing.

ELECTRICAL REQUIREMENTS

Unless otherwise specified, this game is set to operate at 110 Volts A.C. (See Fig. 2 and 110/220 VAC conversion instructions.)

Power supply chasis schematic information and parts list are included in this manual.

110/220 VAC CONVERSION INSTRUCTIONS

This game contains a harness configuration which allows the machine to be operated from either a 110 VAC or 220 VAC, 50 Hz or 60 Hz power source. All games shipped from Centuri, Inc., are in the 220 VAC configuration. To change to the 220 VAC configuration follow the procedure below.

FIRST: Unplug the machine from the wall outlet to completely eliminate shock hazards.

SECOND: Remove the single 3 AMP slow-blow fuse found in the A.C. Distribution Bracket, and install two, 1.5 AMP slow-blow fuses. Next cut the #18 AWG. white jumper at both ends of the fuse holder, and replace the cover.

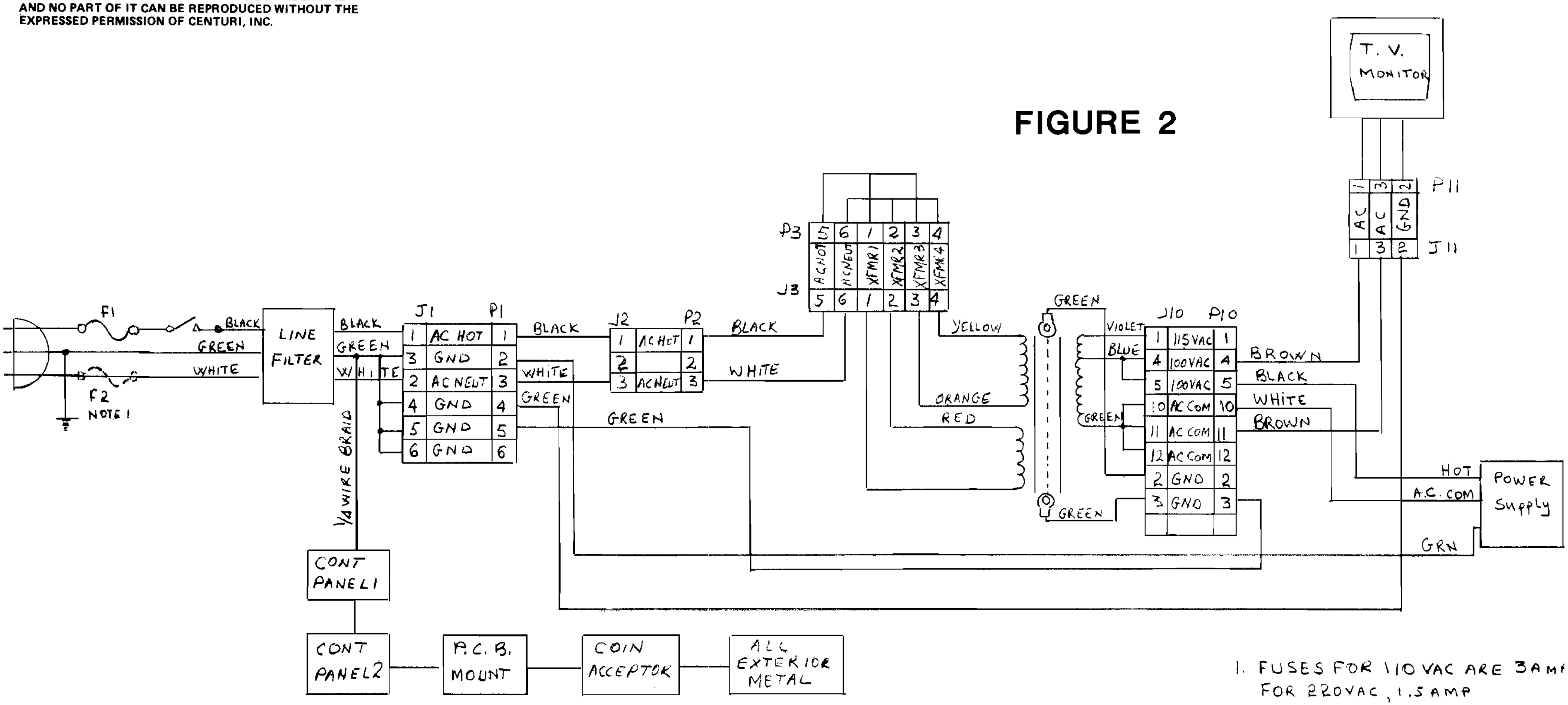
THIRD: On the game power transformer, locate the "orange" jumper plug which is marked, 110 VAC. Unplug the "orange" jumper, and plug in the "red" jumper marked 220 VAC.

To revert back to 110 VAC, replace the components originally removed from the Steps above.

***NOTE: The common side of the A.C. Line must not be fused in the 110 VAC configuration- Replace the #18 AWG., white jumper wire.

(Refer also to FIG. 2, 110/220 POWER INTERCONNECT DIAGRAM, # 386-10-0300)

FIGURE 2



A C DISTRIBUTION

1. FUSES FOR 110 VAC ARE 3 AMP
FOR 220VAC, 1.5 AMP

QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY NO

REV. LET.	ECN NO.	REVISION	BY

TOLERANCES Unless Otherwise Specified

FRACTIONS	±	1/32
DECIMALS 2 PL	±	.015
DECIMALS 3 PL	±	.005
HOLES	+ −	.003 .001
ANGLES	±	1/2°
SHT. MET BENDS	±	2°

centuri inc. HIALEAH, FLORIDA 33014

NAME: AC INTERCONNECT DIAGRAM COCKTAIL

MATL'S. | HEAT TREAT. | FINISH

DWN. | APP'D. | DATE | SCALE | PART NO. 3[illegible]300 | REV.

AF 17899B

ROUTINE MAINTENANCE & SERVICE

Because of the solid state electronic circuitry, this machine should require very little maintenance, and only occassional adjustments. However, it is necessary to take steps to insure this.

The volume control is located on the bottom side of the printed circuit board, farthest from the side of the cabinet, and can be accessed through the rear door.

The video monitor has been properly adjusted before shipping. Occassionally minor adjustments are necessary. Technical information, along with schematics, can be found in this manual. Adjustment controls for the monitor are located on the rear of the monitor.

"DO NOT MAKE ANY ADJUSTMENTS ON THIS MACHINE WHILE THE POWER IS ON!" This machine should only be adjusted by a "qualified" technician.

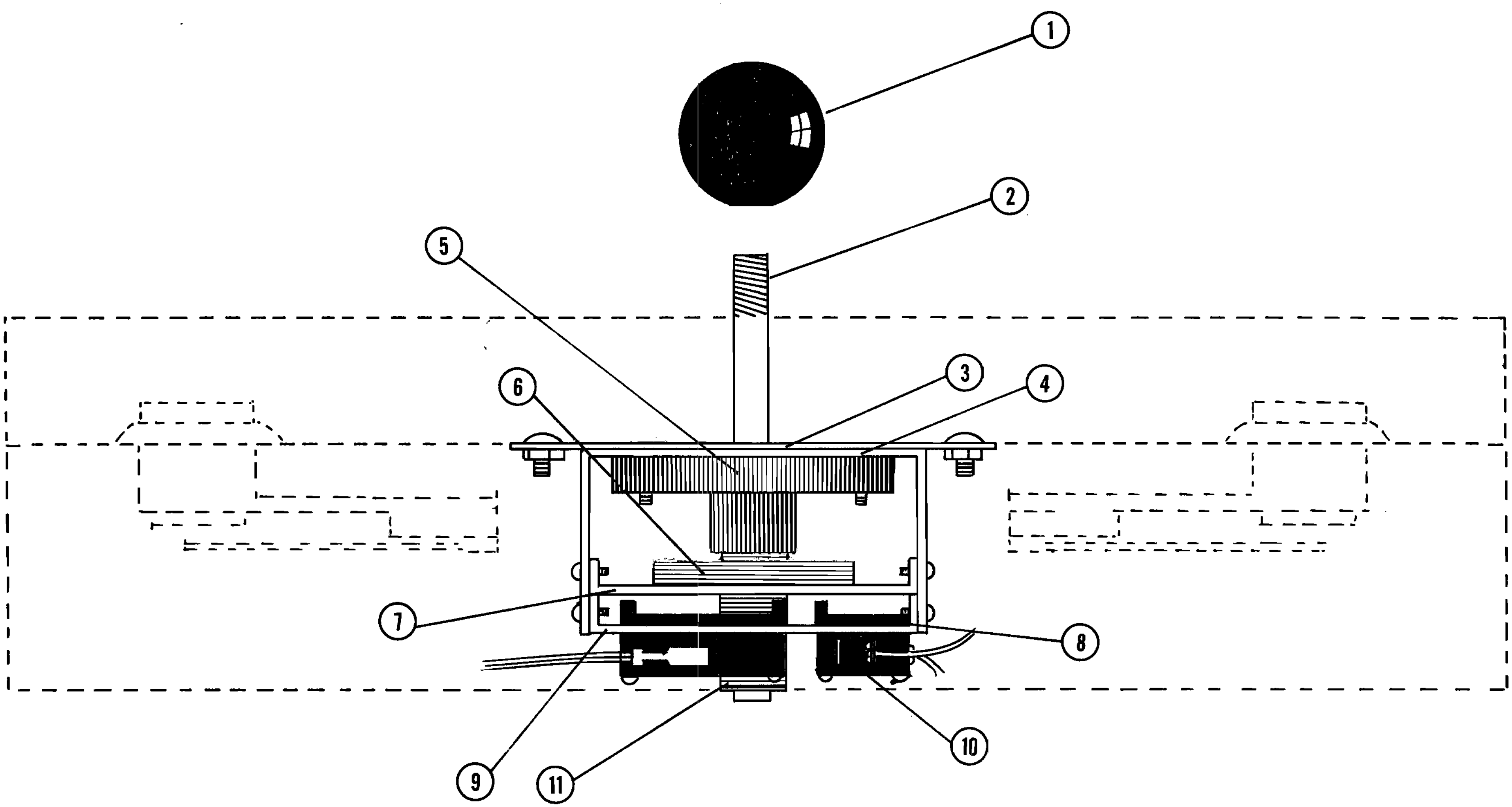
For Service Information, contact:

CENTURI, INC.

CUSTOMER SERVICE DEPARTMENT
#800-327-7710 (Outside the State of Fla.)
#305-556-5888 (In Florida)

POWER SUPPLY

The Computer Board in this game operates most efficiently and reliably when the power supply is set so the voltage on the Board is 5.0 Volts, ±0.1 Volts. To check this, place a meter across 5 Volts, and ground, at the edge connector. If necessary, adjust the screwdriver control on the power supply, so the meter reads between 4.9 and 5.1 Volts.



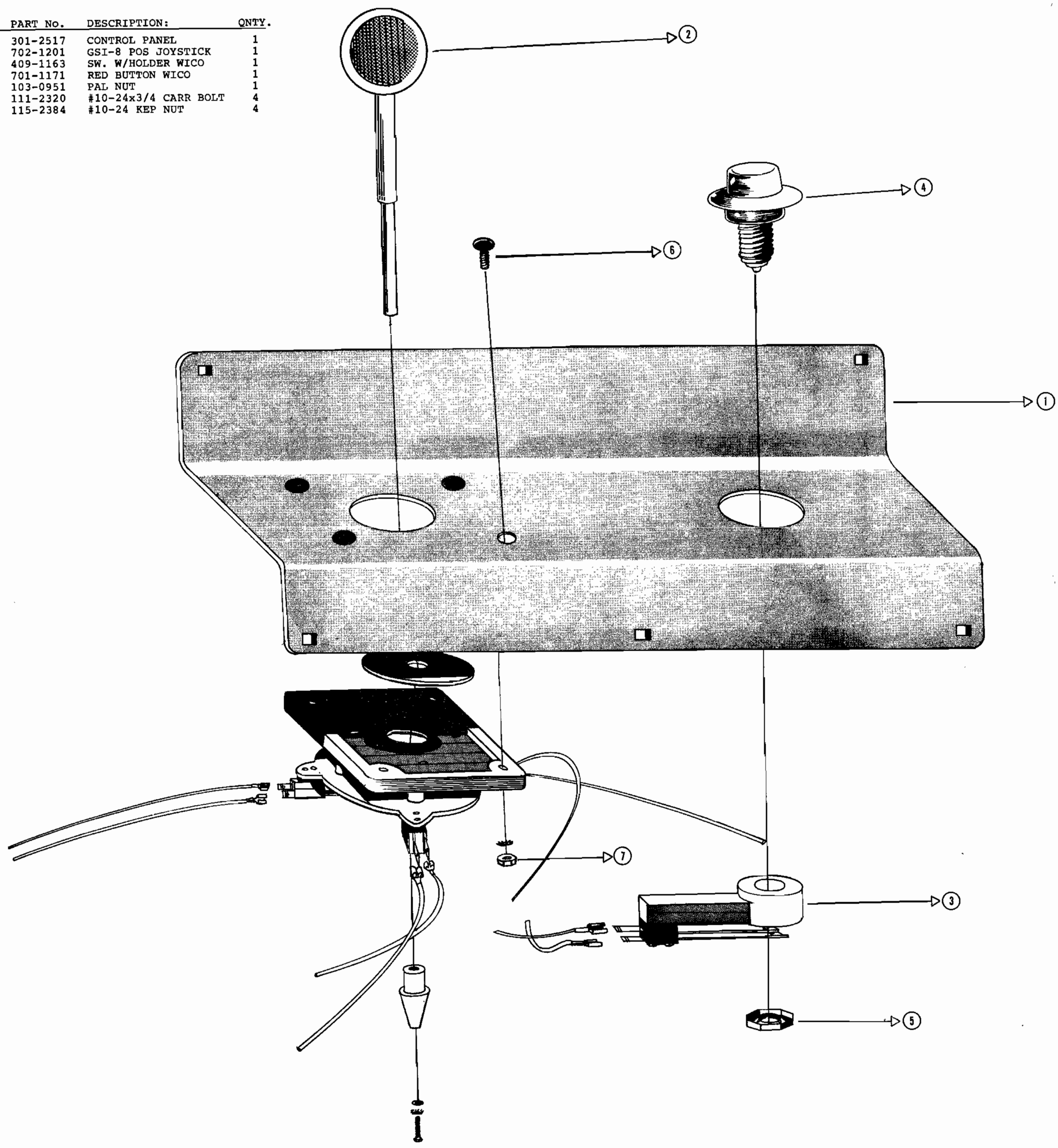
(Fig.3) EXPLODED VIEW of joystick ass'y.

GSI-8 POSITION JOYSTICK ASS'Y

PARTS LIST

ITEM	CENTURI P/N:	DESCRIPTION:	QNTY.
1.	607-0030	KNOB	1
2.	607-0031	SHAFT	1
3.	304-2666	JOYSTICK ADAPT PLATE	1
4.	607-0035	BODY BRKT.	1
5.	607-0032	RUBBER DIAPHRAGM	1
6.	607-0034	PLASTIC WASHER	1
7.	607-0036	FUNCTION PLATE (8 WAY)	1
8.	607-0039	SWITCH HOLDER	1
9.	607-0037	SWITCH PLATE	1
10.	607-0038	MICRO SWITCH 5 AMP	1
11.	607-0033	SWITCH ACTUATOR	1

ITEM	PART No.	DESCRIPTION:	QNTY.
1.	301-2517	CONTROL PANEL	1
2.	702-1201	GSI-8 POS JOYSTICK	1
3.	409-1163	SW. W/HOLDER WICO	1
4.	701-1171	RED BUTTON WICO	1
5.	103-0951	PAL NUT	1
6.	111-2320	#10-24x3/4 CARR BOLT	4
7.	115-2384	#10-24 KEP NUT	4



(FIG,4) EXPLODED VIEW OF CONTROL PANEL AS Y

COMPUTER & LOGIC BOARD

PARTS LIST

ITEM	PART NUMBER:	DESCRIPTION:	QNTY.
1.	501-0176	74LS367, I.C.	1
2.	501-0200	74LS138, I.C.	1
3.	501-0102	74LS00, I.C.	1
4.	501-0184	74LS163, I.C.	4
5.	501-0153	74LS08, I.C.	2
6.	501-0108	74LS04, I.C.	2
7.	501-0202	74LS245, I.C.	5
8.	501-0112	74LS10, I.C.	1
9.	501-0214	74LS244, I.C.	3
10.	501-0190	74LS259, I.C.	1
11.	501-0192	74LS298, I.C.	1
12.	501-0156	74LS32, I.C.	3
13.	501-0170	74LS139, I.C.	1
14.	501-0426	74LS378, I.C.	1
15.	501-0182	74LS377, I.C.	2
16.	501-0205	74LS273, I.C.	3
17.	501-0125	74LS86, I.C.	5
18.	501-0121	74LS74, I.C.	2
19.	501-0427	74LS293, I.C.	1
20.	501-0135	74LS174, I.C.	1
21.	501-0141	74LS157, I.C.	5
22.	501-0211	74LS368, I.C.	2
23.	501-0129	74LS107, I.C.	1
24.	501-0250	Z-80A MICROPROCESSOR	1
25.	501-0435	2149, RAM	2
26.	500-0017	6331, 123N BIP PROM	2
27.	501-0405	2114, 200NS STATIC RAM	4
28.	500-0011	74S287 BIPOLAR PROM	2
29.	501-0074	8Kx2 RAM 2128	2
30.	500-0023	2764, EPROM	6
31.	501-0428	083 CUST. CHIP-KONAMI	2
32.	501-0429	082 CUST. CHIP-KONAMI	1
33.	501-0430	K824-501 CUST. CHIP-KONAMI	1
34.	501-0431	K824-502 CUST. CHIP-KONAMI	1
35.	501-0432	K824-503 CUST. CHIP-KONAMI	1

COMPUTER & LOGIC BOARD

PARTS LIST

ITEM	PART NUMBER:	DESCRIPTION:	QNTY.
36.	501-0433	K528 CUST. CHIP-KONAMI	1
37.	501-0434	K526 CUST. CHIP-KONAMI	1
38.	501-0224	555 PRECISION TIMER	1
39.	502-0381	2SA697 TRANSISTOR	1
40.	502-0379	2SC2320 TRANSISTOR	1
41.	510-0654	10D1 DIODE	1
42.	510-0611	1S1588 DIODE	1
43.	507-0554	18,432 MHZ CRYSTAL	1
44.	504-1025	5 PIN SIP RESISTOR NETWORK(1Kx4)	3
45.	504-1024	9 PIN SIP RESISTOR NETWORK (1Kx8)	1
46.	516-0913	330 MF, 16V, RADIAL ELECTROLYTIC CAP.	1
47.	516-0822	220 MF, 10V, RADIAL ELECTROLYTIC CAP.	1
48.	516-0802	47 MF, 10V, RADIAL ELECTROLYTIC CAP.	2
49.	517-0758	0.047 MF, 50V, MYLAR CAP.	2
50.	517-0766	0.001 MF 50V, MYLAR CAP.	2
51.	515-0705	0.1 MF, 16V, DISC CERAMIC CAP.	51
51.	515-0778	470 PF, 25V DISC CERAMIC CAP.	2
52.	515-0734	220 PF, 50V, DISC CERAMIC CAP.	3
53.	515-0748	100 PF, 50V, DISC CERAMIC CAP.	6
54.	515-0702	0.01 MF, 50V, DISC CERAMIC CAP.	1
55.	503-0425	330 OHM, 1/4 WATT, 5% RESISTOR	3
56.	503-0413	1K OHM, 1/4 WATT, 5% RESISTOR	5
57.	503-0473	100 OHM, 1/4 WATT, 5% RESISTOR	1
58.	503-0407	470 OHM, 1/4 WATT, 5% RESISTOR	5
59.	503-0561	390 OHM, 1/4 WATT, 5% RESISTOR	3
60.	503-0446	560 OHM, 1/4 WATT, 5% RESISTOR	3
61.	503-0458	820 OHM, 1/4 WATT, 5% RESISTOR	3
62.	503-0403	1.2K, 1/4 WATT, 5% RESISTOR	3
63.	503-0405	4.7K, 1/4 WATT, 5% RESISTOR	3
64.	503-0417	10K, 1/4 WATT, 5% RESISTOR	2
65.	503-0459	20K, 1/4 WATT, 5% RESISTOR	1
66.	514-1572	28 PIN SOCKET	12
67.	514-1570	40 PIN SOCKET	1
68.	401-1376	40 POS RIGHT ANGLE PCB HEADER ANSLEY	1
69.	008-4794	CPU LOGIC TO SOUND BD HARNESS	1
70.	513-1143	KT-5207-1B CPU LOGIC,PCB CARD T PILOT	1

SOUND BOARD "TIME PILOT"

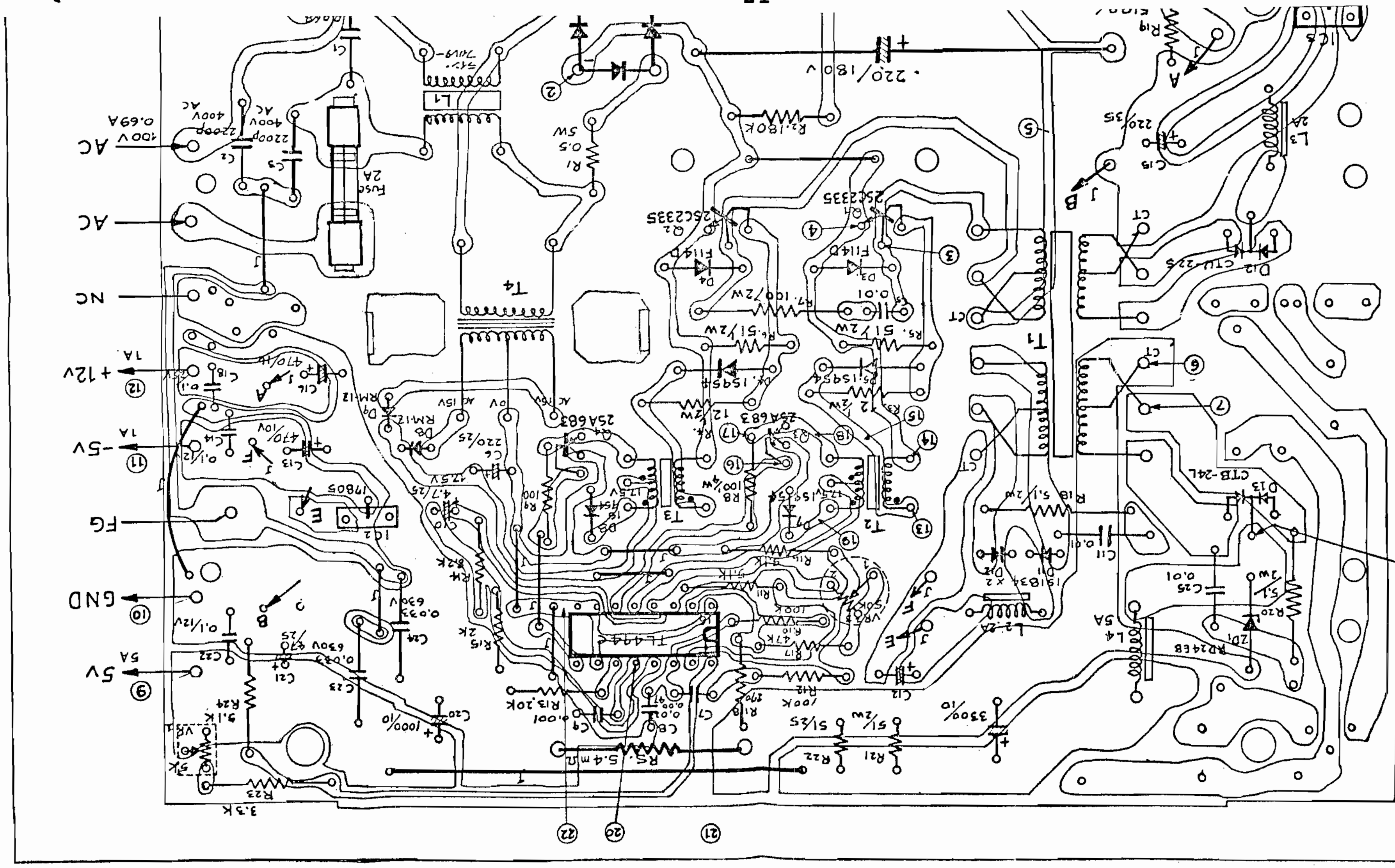
PARTS LIST

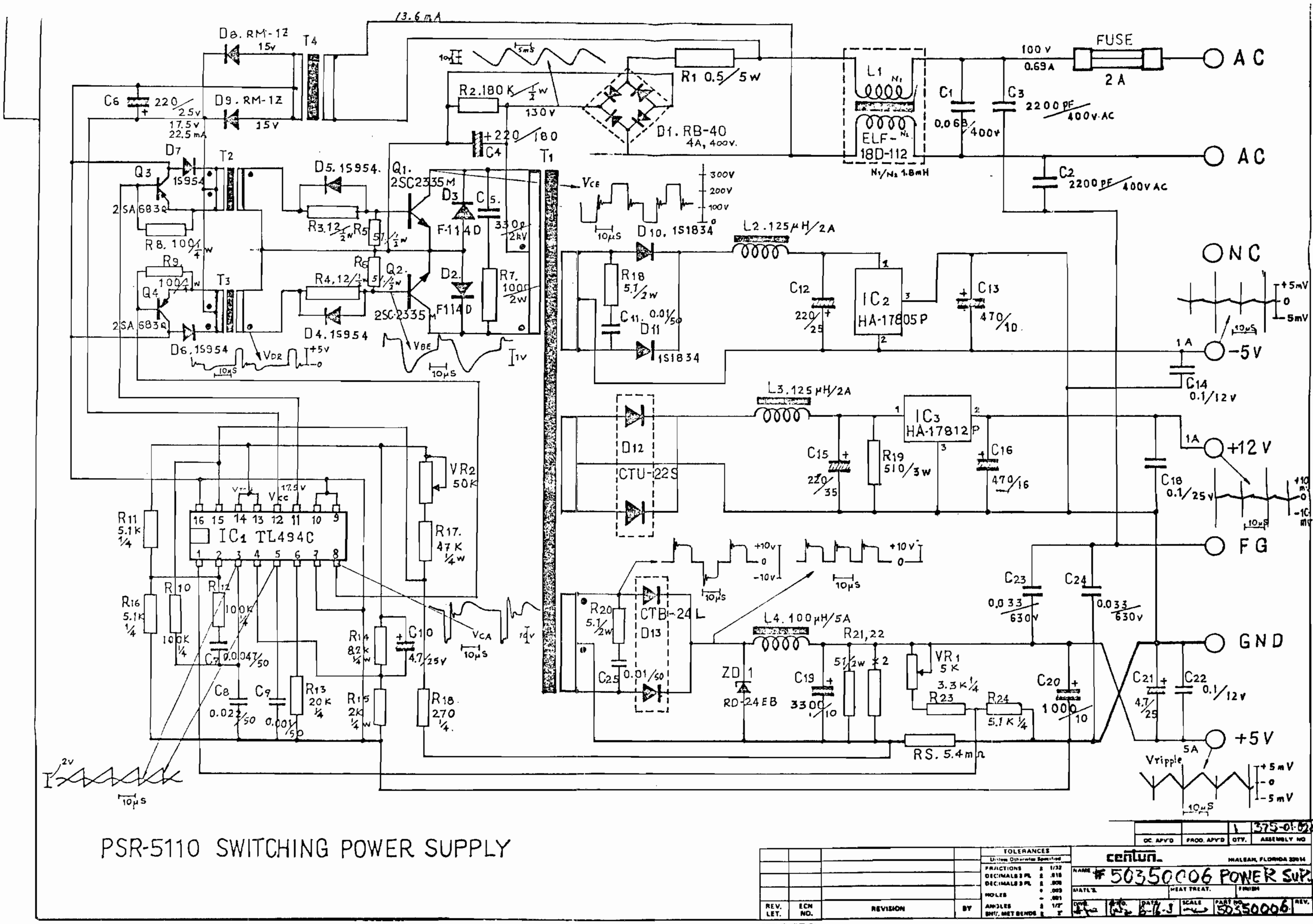
ITEM	PART NUMBER:	DESCRIPTION:	QNTY.
1.	501-0093	Z-80	1
2.	501-0237	AY-3-8910P. SOUND GENERATOR	2
3.	501-0387	74LS90, I.C.	1
4.	501-0127	74LS93, I.C.	1
5.	501-0180	74LS393, I.C.	1
6.	501-0106	7404, I.C.	1
7.	501-0200	74LS138, I.C.	1
8.	501-0105	74LS02, I.C.	1
9.	501-0102	74LS00, I.C.	1
10.	501-0205	74LS273, I.C.	1
11.	501-0121	74LS74, I.C.	1
12.	501-0156	74LS32, I.C.	1
13.	501-0176	74LS367, I.C.	3
14.	501-0436	74LS253, I.C.	4
15.	501-0135	74LS174, I.C.	2
16.	501-0212	4066 B CMOS QUAD BILATERAL SW.	3
17.	501-0321	741 OP. AMP COMPARATOR	1
18.	500-0008	2732, 4Kx8 EPROM	1
19.	501-0405	2114-300NS STATIC RAM	2
20.	507-0560	14.318 MHZ CRYSTAL	1
21.	504-1028	2.2K OHM, 9 PIN RESISTOR NETWORK	5
22.	501-0437	LA4460 AUDIO AMPLIFIER	1
23.	408-3005	HEAT SINK (TIME PILOT, SOUND BD.)	1
24.	502-0379	2S2320 TRANSISTOR	3
25.	502-0380	2SD361 TRANSISTOR	2
26.	510-0654	1001, DIODE	3
27.	516-0828	1000 MF, 16V RADIAL ELECTROLYTIC CAP.	2
28.	516-0822	220 MF, 10V RADIAL ELECTROLYTIC CAP.	1
29.	516-0894	100 MF, 25V RADIAL ELECTROLYTIC CAP.	1
30.	519-0870	6.8 MF, 16V TANTALUM CAP.	1
31.	519-0873	0.22 MF, 35V TANTALUM CAP.	6
32.	517-0758	0.047 MF, 50V MYLAR CAP.	6
33.	517-0772	0.033 MF, 50V MYLAR CAP.	2
34.	517-0768	0.01 MF 50v MYLAR	1

SOUND BOARD "TIME PILOT"

PARTS LIST

ITEM	PART NUMBER:	DESCRIPTION:	QNTY.
35.	517-0765	0.1 MF, 50V MYLAR CAP.	1
36.	515-0705	0.1 MF, 16V DISC CERAMIC CAP.	50
37.	515-0734	220 PF, 50V DISC CERAMIC CAP.	2
38.	515-0778	470 PF, 25V DISC CERAMIC CAP.	1
39.	515-0748	100 PF, 25V DISC CERAMIC CAP.	1
40.	514-1571	24 PIN I.C. SOCKET	1
41.	503-0433	220 OHM, 1/4 WATT, 5% RESISTOR	24
42.	503-0405	4.7K, 1/4 WATT, 5% RESISTOR	3
43.	503-0452	1.8K, 1/4 WATT, 5% RESISTOR	1
44.	503-0403	1.2K, 1/4 WATT, 5% RESISTOR	1
45.	503-0413	1K, 1/4 WATT, 5% RESISTOR	10
46.	503-0454	5.1K, 1/4 WATT, 5% RESISTOR	7
47.	418-2096	VR-200, TRIMMER	1
48.	503-0458	820 OHM, 1/4 WATT, 5% RESISTOR	2
49.	503-0417	10K OHM, 1/4 WATT, 5% RESISTOR	1
50.	506-1000	8 POSITION DIP SWITCH	2
51.	401-1280	RTB-1.5-2F (J.S.T.) 2 PIN WAFER	1
52.	513-1144	KT-5112-2B SOUND BARE BD. TIME PILOT	1
53.	401-1376	40 P.RIGHT ANGLE PCB HEADER ANSLEY	1
54.	519-0884	22 MF, 16V TANTALUM CAP.	1


AC
100V
0.69A
AC
NC
+12V
1A
-5V
1A
FG
GND
5V
5A
T1
T2
T3
T4
L1
L2 2A
L3 2A
L4 5A
TL494
IC2
7805
Fuse 2A
R1 0.5 5W
R2 180K
220/180V
25C2335
25A683
CTB-24L
CTU-22S
RD24EB
R5 5.4mΩ
R13 20K
R14 8.2K
R15 2K
R23 3.3K
R24 9.1K
3300/10
1000/10



PSR-5110 SWITCHING POWER SUPPLY

PSR-5110 SWITCHING POWER SUPPLY

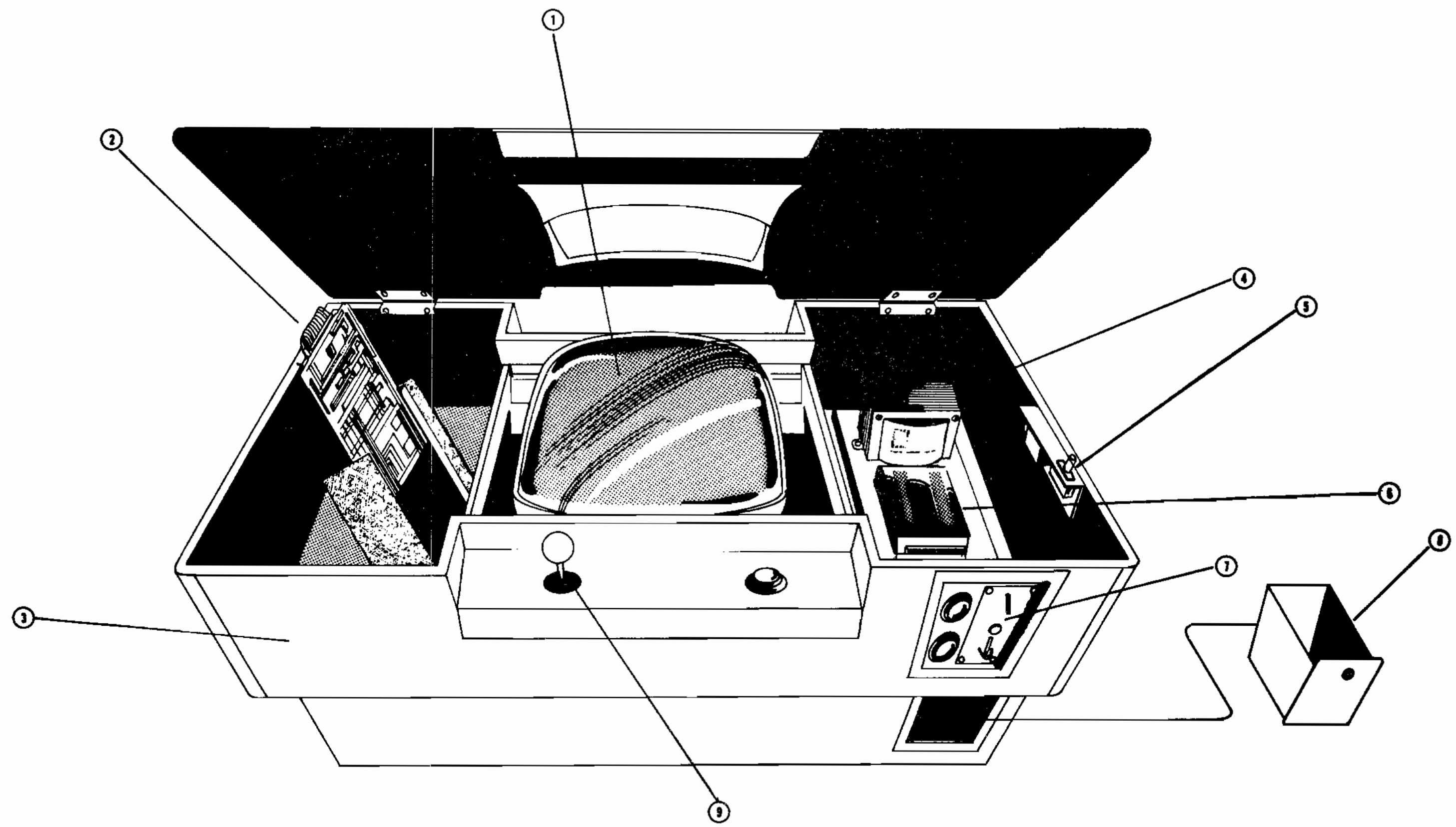
PARTS LIST

SYMBOL:	DESCRIPTION:	QNTY.
D1	STACK DIODE	1
D8, D9	RECTIFIER	2
D2, D3	HIGH SPEED DIODE	2
D4, D5, D6, D7	HIGH SPEED DIODE	4
D13	HIGH SPEED DIODE	1
D12	HIGH SPEED DIODE	1
D10, D11	HIGH SPEED DIODE	2
ZD1	ZENER DIODE	1
Q1, Q2	TRANSISTOR	2
IC1	I.C.	1
IC2	I.C.	1
IC3	I.C.	1
T1	PULSE POWER TRANSFORMER	1
T2, T3	PULSE DRIVE TRANSFORMER	2
T4	BIAS TRANSFORMER	1
L2, L3	R.F. CHOK TRANSFORMER	2
L4	R.F. CHOK TRANSFORMER	1
L1	A.C. LINE FILTER	1
C2, C3	LINE BY-PASS CONDENSER	3
C1, C23, C24	METALIZED POLIESTER CONDENSER	3
C9	MYLAR CONDENSER	1
C7	MYLAR CONDENSER	1
C11, C25	MYLAR CONDENSER	2
C8	MYLAR CONDENSER	1
C5	CERAMIC CONDENSER	1
C14, C18, C24	CERAMIC CONDENSER	3
C10, C21	ELECTROLYTIC CONDENSER	2
C13, C16	ELECTROLYTIC CONDENSER	2
C20	ELECTROLYTIC CONDENSER	1
C19	ELECTROLYTIC CONDENSER	1
C12, C15	ELECTROLYTIC CONDENSER	2
C6	ELECTROLYTIC CONDENSER	1
C4	ELECTROLYTIC CONDENSER	1
R1	CEMENT FUSE RESISTOR	1
R21, R22	METAL RESISTOR	2
R19	METAL RESISTOR	1
R7	METAL RESISTOR	1
R18, R20	METAL RESISTOR	2
R2, R3, R4, R5, R6, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R23, R24	METAL RESISTOR	18
RS	MANGAN WIRE, 5.4M, OHM	1
VR1	SEMI-FIXED RESISTOR	1
VR2	SEMI FIXED RESISTOR	1
F1	FUSE	1
F2	FUSE HOLDER	1
10m/m	NICKEL WIRE, 0.7ø	1
150m/m	TUBE, 1.0ø	1
100m/m	TUBE, 1.5ø	1
J11	LEAD WIRE	1

PSR-5110 SWITCHING POWER SUPPLY

PARTS LIST

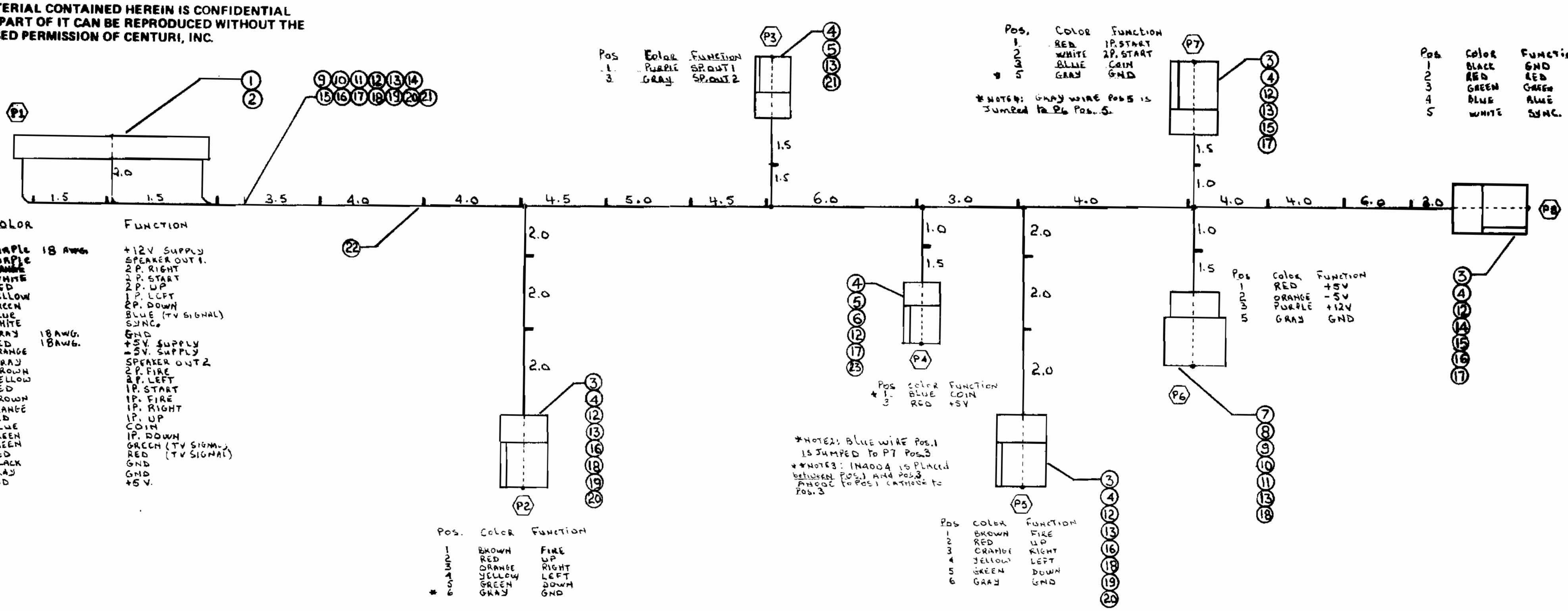
SYMBOL:	DESCRIPTION:	QNTY.
J12	LEAD WIRE	1
J13	LEAD WIRE	1
J14	LEAD WIRE	1
	BIND TUBE	3
SM221	MAIN P.C. BOARD	1
	TERMINAL	1
	RATING LABEL	1
	TERMINAL LABEL	1
	BIND SCREW	5
	TRUSS SCREW	8
	TAPPING SCREW	13
	HEX NUT	7
	FLAT WASHER	7
	RECTANGULAR WASHER	6
	SPRING WASHER	7
	MICA WASHER	12
	INSULATION BUSHING	6
	TOP CASE/BOTTOM CASE	2
	FRONT PANEL	1
	REAR PANEL	1
	TERMINAL SUPPORT	1
	HEAT SINK A	1
	HEAT SINK B	1
	HEAT SINK C	1
	HEAT SINK D	1
	METAL HOLDER	4



INTERIOR VIEW OF COCKTAIL TABLE.

ITEM	ASSEMBLY No.	DESCRIPTION
1.	406-2056	Monitor Wired Assy
2.	003-4531	P.C.B. Boards
3.	004-4239	Cocktail Table Sub'Assy
4.	007-4851	Transformer Wired Assy
5.	013-4654	A.C.Line Dist. Wired Assy c.t.
6.	005-4468	P.A.L. Power Supply
7.	009-4683	Coin Acceptor/Start Sw. Assy
8.	017-0958	Cash Box Assy
9.	006-4453	Control Panel Assy

THE MATERIAL CONTAINED HEREIN IS CONFIDENTIAL AND NO PART OF IT CAN BE REPRODUCED WITHOUT THE EXPRESSED PERMISSION OF CENTURI, INC.



P1

POS.	COLOR		FUNCTION
1	PURPLE	18 AWG.	+12V SUPPLY
2	PURPLE		SPEAKER OUT 1.
4	ORANGE		2P. RIGHT
5	WHITE		2P. START
6	RED		2P. UP
8	YELLOW		1P. LEFT
9	GREEN		2P. DOWN
13	BLUE		BLUE (TV SIGNAL)
14	WHITE		SYNC.
17	GRAY	18 AWG.	GND
18	RED	18 AWG.	+5V. SUPPLY
A	ORANGE		-5V. SUPPLY
B	GRAY		SPEAKER OUT 2
C	BROWN		2P. FIRE
D	YELLOW		2P. LEFT
E	RED		1P. START
H	BROWN		1P. FIRE
J	ORANGE		1P. RIGHT
K	RED		1P. UP
L	BLUE		COIN
M	GREEN		1P. DOWN
P	GREEN		GREEN (TV SIGNAL)
R	RED		RED (TV SIGNAL)
T	BLACK		GND
U	GRAY		GND
V	RED		+5 V.

P2

POS.	COLOR	FUNCTION
1	BROWN	FIRE
2	RED	UP
3	ORANGE	RIGHT
4	YELLOW	LEFT
5	GREEN	DOWN
* 6	GRAY	GND

*NOTE 1: GRAY WIRE (GND) POS. 6 IS JUMPED TO P5 POS. 6

P3

POS	COLOR	FUNCTION
1	PURPLE	SP. OUT 1
3	GRAY	SP. OUT 2

P4

POS	COLOR	FUNCTION
* 1	BLUE	COIN
3	RED	+5V

*NOTE 2: BLUE WIRE POS. 1 IS JUMPED TO P7 POS. 3

**NOTE 3: 1N4004 IS PLACED BETWEEN POS. 1 AND POS. 3 ANODE TO POS. 1 CATHODE TO POS. 3

P5

POS	COLOR	FUNCTION
1	BROWN	FIRE
2	RED	UP
3	ORANGE	RIGHT
4	YELLOW	LEFT
5	GREEN	DOWN
6	GRAY	GND

P6

POS	COLOR	FUNCTION
1	RED	+5V
2	ORANGE	-5V
3	PURPLE	+12V
5	GRAY	GND

P7

POS.	COLOR	FUNCTION
1	RED	1P. START
2	WHITE	2P. START
3	BLUE	COIN
* 5	GRAY	GND

*NOTE 4: GRAY WIRE POS 5 IS JUMPED TO P6 POS. 5.

P8

POS	COLOR	FUNCTION
1	BLACK	GND
2	RED	RED
3	GREEN	GREEN
4	BLUE	BLUE
5	WHITE	SYNC.

QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY NO

REV. LET.	ECN NO.	REVISION	BY

TOLERANCES
Unless Otherwise Specified

FRACTIONS	± 1/32
DECIMALS 2 PL	± .015
DECIMALS 3 PL	± .005
HOLES	+ .003 − .001
ANGLES	± 1/2°
SHT. MET BENDS	± 2°

centuri INC. HIALEAH, FLORIDA 33014

NAME: C.P.U. HARNESS – TIME PILOT – C.T.

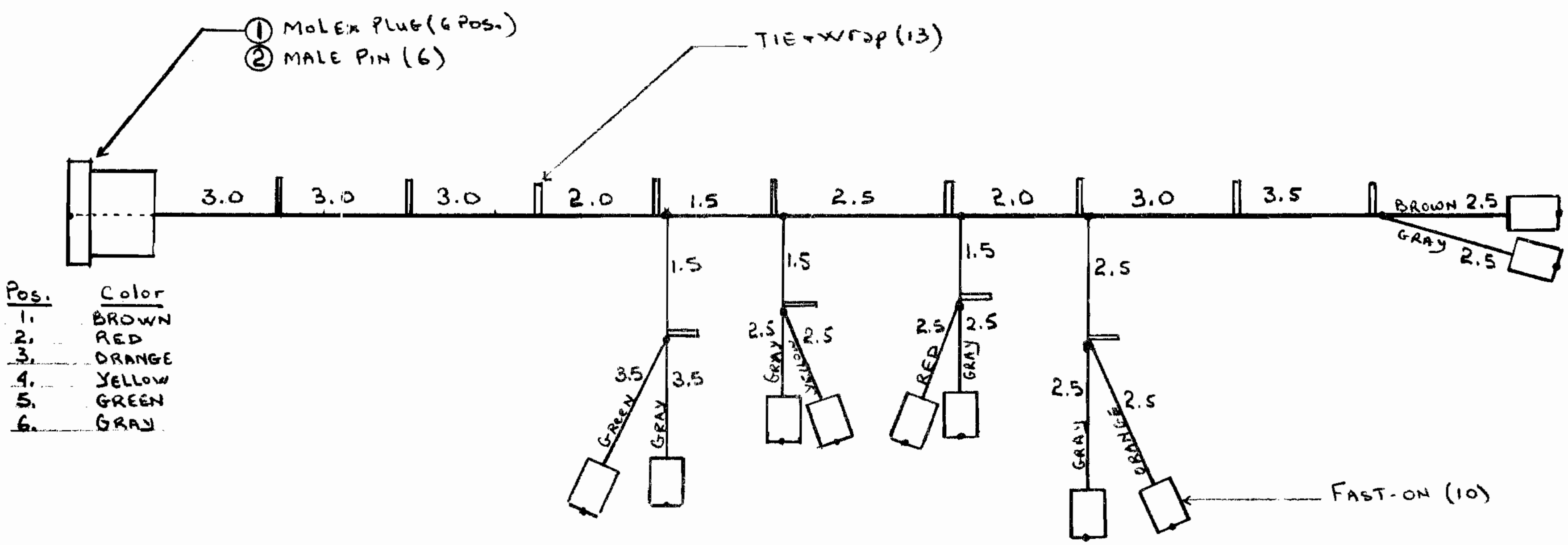
MATL'S. | HEAT TREAT. | FINISH

DWN. N. Chatman | APP'D. [signature] | DATE 11/15/82 | SCALE | PART NO. 008-4875 | REV.

C.P.U. HARNESS "TIME PILOT" C.T.

PARTS LIST

ITEM	PART NUMBER	DESCRIPTION:	QNTY.
1.	401-1247	09-50-5185 MOLEX DUAL 18 HOUSING	1
2.	401-1261	08-03-0303 MOLEX CRIMP TERMINAL	26
3.	401-1231	03-09-1061 MOLEX 6 PIN RECEPTACLE	4
4.	401-1243	02-09-1101 MOLEX FEMALE PIN	25
5.	401-1225	03-09-1031 MOLEX 3 PIN RECEPTACLE	2
6.	510-0656	IN4004 1 AMP 400PIV DIODE	1
7.	401-1229	03-09-2061 MOLEX 6 PIN PLUG	1
8.	401-1242	02-09-2101 MOLEX MALE PIN	4
9.	402-1332	18 AWG RED STRANDED WIRE	47"
10.	402-1387	18 AWG PURPLE STRANDED WIRE	47"
11.	402-1398	18 AWG GRAY STRANDED WIRE	47"
12.	402-1432	22 AWG RED STRANDED WIRE	224"
13.	402-1498	22 AWG GRAY STRANDED WIRE	75"
14.	402-1509	22 AWG BLACK STRANDED WIRE	66"
15.	402-1410	22 AWG WHITE STRANDED WIRE	113"
16.	402-1465	22 AWG GREEN STRANDED WIRE	137"
17.	402-1476	22 AWG BLUE STRANDED WIRE	170"
18.	402-1443	22 AWG ORANGE STRANDED WIRE	71"
19.	402-1454	22 AWG YELLOW STRANDED WIRE	71"
20.	402-1421	22 AWG BROWN STRANDED WIRE	71"
21.	402-1487	22 AWG PURPLE STRANDED WIRE	35"
22.	417-1601	TY-WRAP	23
23.	417-1609	1/4" DIAMETER HEAT SHRINK TUBING	1"



QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY NO

REV. LET.	ECN NO.	REVISION	BY

TOLERANCES
Unless Otherwise Specified

FRACTIONS	±	1/32
DECIMALS 2 PL	±	.015
DECIMALS 3 PL	±	.005
HOLES	+	.003
	–	.001
ANGLES	±	1/2°
SHT. MET BENDS	±	2°

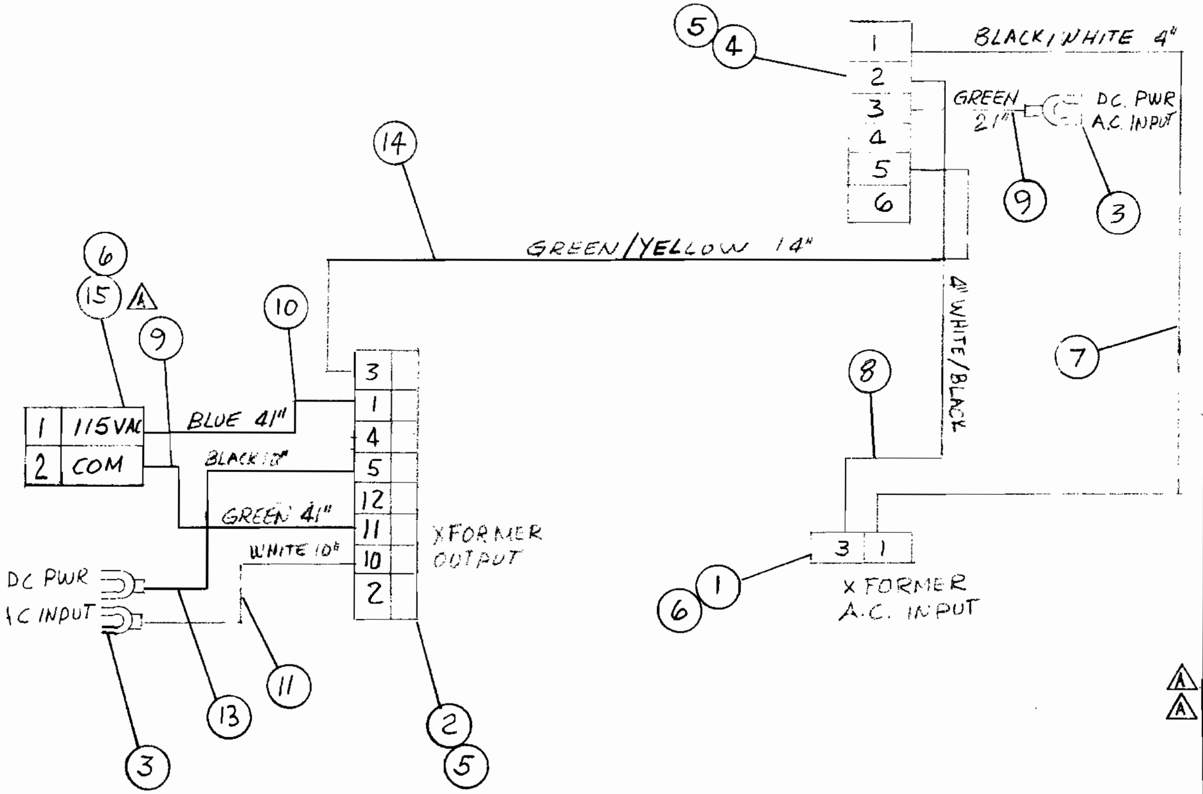
centuri inc. HIALEAH, FLORIDA 33014

NAME: CONTROL PANEL HARNESS C.T. TIME PILOT

MATL'S.	HEAT TREAT.	FINISH

DWN.	APP'D	DATE	SCALE	PART NO.	REV.
[signature]	[signature]	10/19/82		008-4877	

AF 17899A



ITEM	QTY	PART NO	DESCRIPTION
15	1	50150322	2 CKT RECEPTACLE, MOLEX
14	14"	50175404	INSUL. WIRE, GREEN W/YELLOW STRIPE 18AWG
13	10"	50170004	INSUL. WIRE, BLACK 18AWG
12			
11	10"	50179904	INSUL. WIRE, WHITE 18 AWG
10	41"	55176604	" " BLUE 18 AWG
9	62"	50175504	" " GREEN 18AWG
8	4"	50179004	" " WHITE W/BLACK STRIPE 18AWG
7	4"	50170904	INSUL. WIRE, BLACK W/WHITE STRIPE 18AWG
6	4	50150278	MOLEX FEMALE PIN ON REEL
5	9	50150277	MOLEX MALE PIN ON REEL
4	1	50150260	MOLEX 6 PIN PLUG W/EARS
3	3	50150293	INSUL. SLEEVE OPEN LUG
2	1	50150261	MOLEX 12 PIN PLUG W/EARS
1	1	50150231	MOLEX 3 PIN RECEPTACLE

BILL OF MATERIAL

QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY NO
		1	378-01-0200

REV. LET.	ECN NO.	REVISION	BY
A		DELETED QTY 1 ON ITEMS 1, 5, 6 AND 12 COMPLETE; ADDED ITEM 15	

TOLERANCES
Unless Otherwise Specified

FRACTIONS	± 1/32
DECIMALS 2 PL	± .015
DECIMALS 3 PL	± .005
HOLES	+ .003 − .001
ANGLES	± 1/2°
SHT. MET BENDS	± 2°

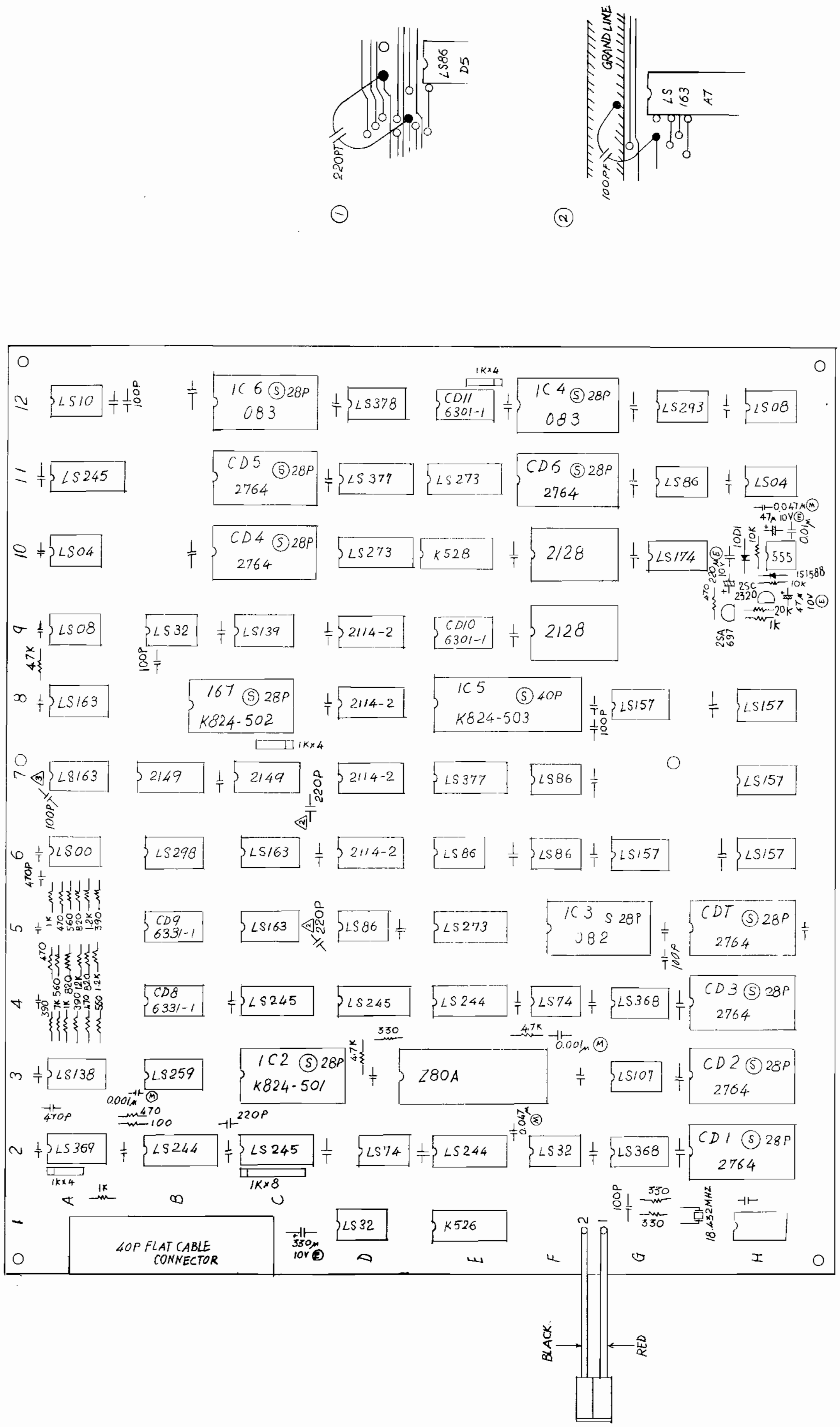
centuri. HIALEAH, FLORIDA 33014

NAME: CABINET POWER HARNESS

MATL'S. | HEAT TREAT. | FINISH

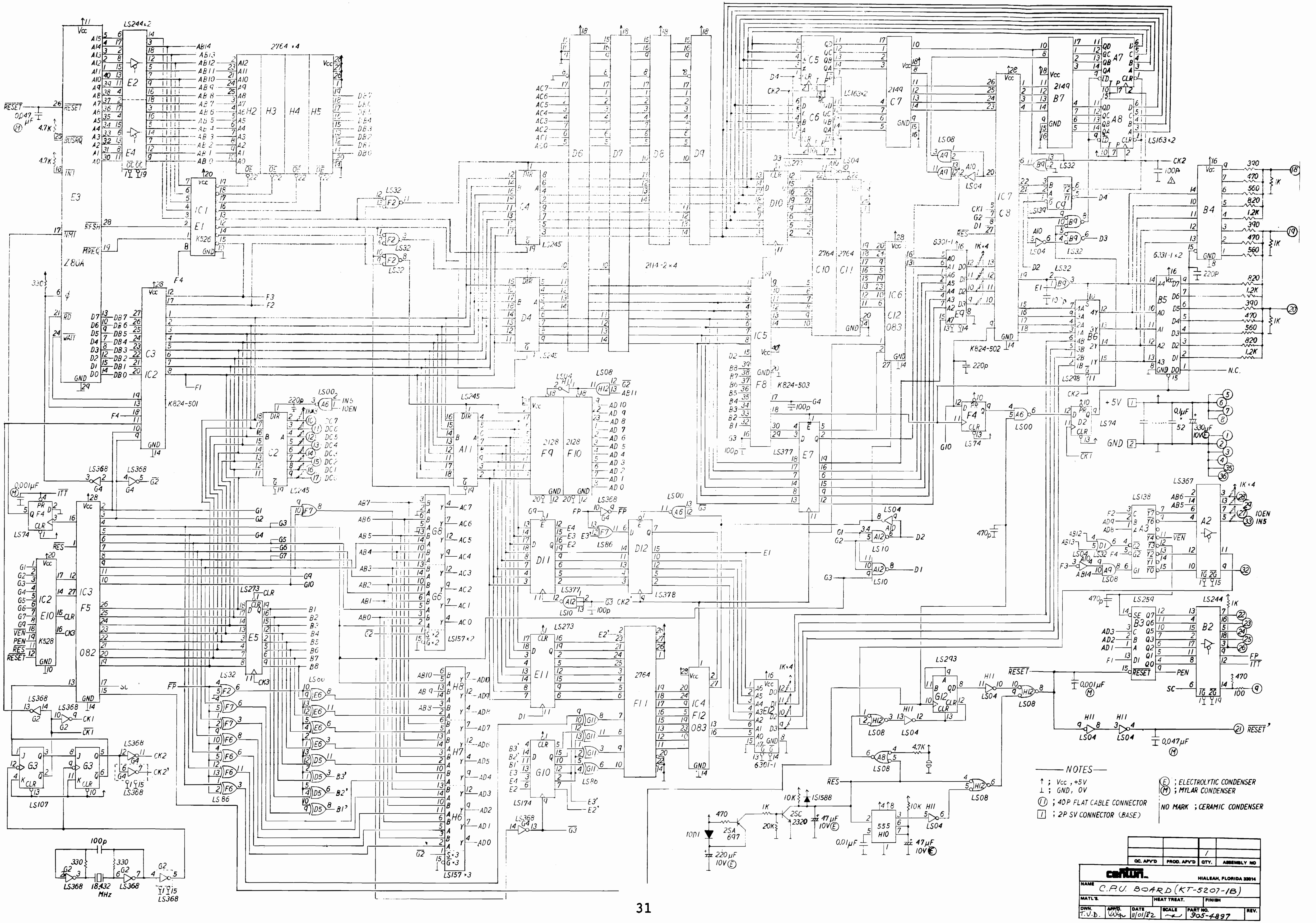
DWN. AAN | APP'D | DATE 10-15-81 | SCALE | PART NO. 378-12-0200 | REV. A

AF 17889B

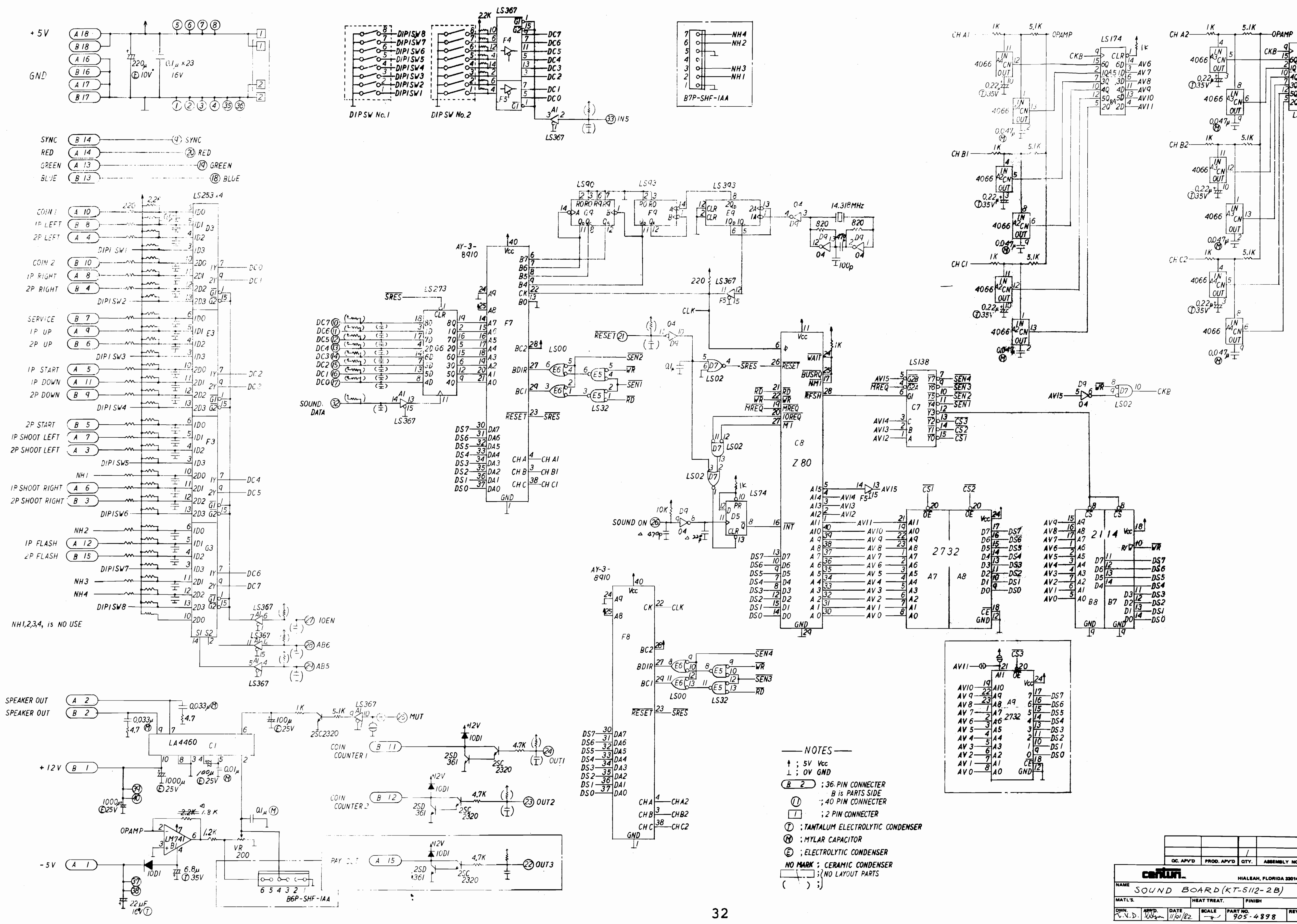


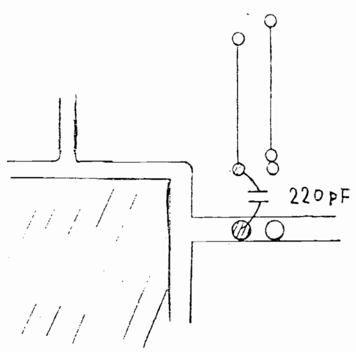
NOTE
Ⓢ ; SOCKET
Ⓔ ; ELECTORLYTIC CONDENSER
Ⓜ ; MYLAR CAPACITER
NO MARK ; CERAMIC CONDENSER

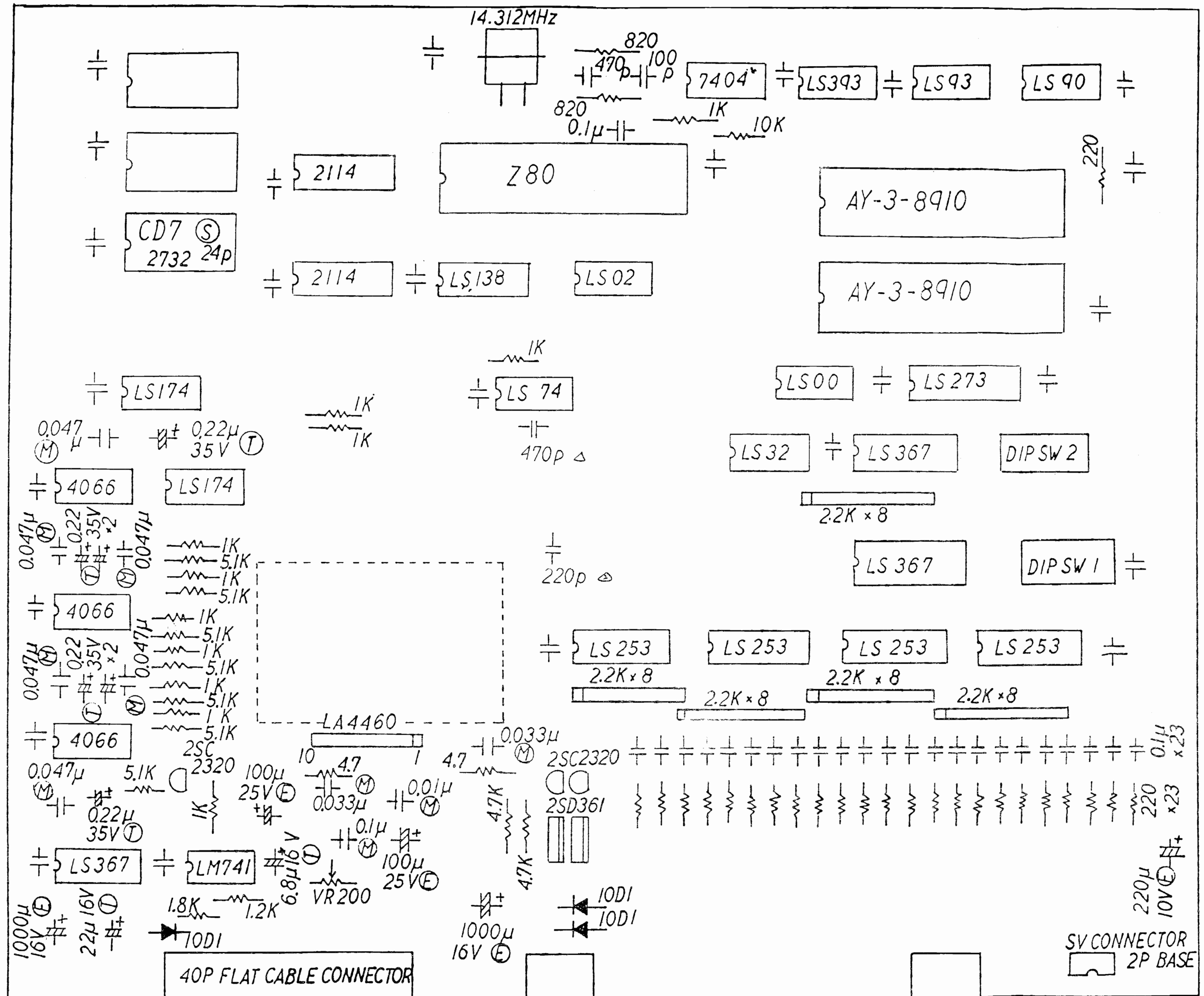
TOLERANCES Unless Otherwise Specified	FRACTIONS ± 1/32; DECIMALS 2 PL ± .015; DECIMALS 3 PL ± .005; HOLES + .003 − .001; ANGLES ± 1/2°; SHT. MET BENDS ± 2°
NAME	C.P.U. & LOGIC Bd. COMPONENTS LAYOUT
	centuri HIALEAH, FLORIDA 33014
MAT'L'S.	HEAT TREAT. / FINISH
DWN. / APP'D. / DATE / SCALE / PART NO. / REV.	
QC. APV'D / PROD. APV'D / QTY. / ASSEMBLY NO.	
REV. LET. / ECN NO. / REVISION / BY	



NOTES
↑ ; Vcc, +5V
⊥ ; GND, 0V
(1) ; 40P FLAT CABLE CONNECTOR
[1] ; 2P SV CONNECTOR (BASE)
(E) ; ELECTROLYTIC CONDENSER
(M) ; MYLAR CONDENSER
NO MARK ; CERAMIC CONDENSER
Q.C. APV'D
PROD. APV'D
QTY.
ASSEMBLY NO
HIALEAH, FLORIDA 33014
NAME
C.P.U. BOARD (KT-5207-1B)
MATL'S.
HEAT TREAT.
FINISH
DWN.
T.V.D.
APPD.
DATE
11/01/82
SCALE
PART NO.
905-4897
REV.


SOUND BOARD (KT-5112-2B)
centuri
HIALEAH, FLORIDA 33014
OC. APV'D | PROD. APV'D | QTY. | ASSEMBLY NO
MAT'L. | HEAT TREAT. | FINISH
DWN. V.N.D. | DATE 11/01/82 | PART NO. 905-4898 | REV.
NOTES
; 5V Vcc
; 0V GND
(B 2) ; 36 PIN CONNECTER, B is PARTS SIDE
; 40 PIN CONNECTER
; 2 PIN CONNECTER
(T) ; TANTALUM ELECTROLYTIC CONDENSER
(M) ; MYLAR CAPACITOR
(E) ; ELECTROLYTIC CONDENSER
NO MARK ; CERAMIC CONDENSER
; NO LAYOUT PARTS
+5V
GND
SYNC
RED
GREEN
BLUE
COIN 1
1P LEFT
2P LEFT
COIN 2
1P RIGHT
2P RIGHT
SERVICE
1P UP
2P UP
1P START
1P DOWN
2P DOWN
2P START
1P SHOOT LEFT
2P SHOOT LEFT
1P SHOOT RIGHT
2P SHOOT RIGHT
1P FLASH
2P FLASH
NH1,2,3,4, is NO USE
SPEAKER OUT
+12V
-5V
OPAMP
LA4460
LM741
VR 200
B6P-SHF-1AA
COIN COUNTER 1
COIN COUNTER 2
PAY OUT
MUT
OUT1
OUT2
OUT3
DIP SW No.1
DIP SW No.2
LS367
LS253 x4
B7P-SHF-1AA
LS90
LS93
LS393
14.318MHz
AY-3-8910
LS273
SOUND DATA
Z80
SOUND ON
LS138
2732
2114
LS174
4066
CH A1
CH B1
CH C1
CH A2
CH B2
CH C2
CKB





—NOTE—

Ⓢ ; SOCKET

Ⓣ ; TANTALUM CONDENSER

Ⓔ ; ELECTORLYTIC CONDENSER

Ⓜ ; MYLAR CAPACITER

NO MARK ; CERAMIC CONDENSER

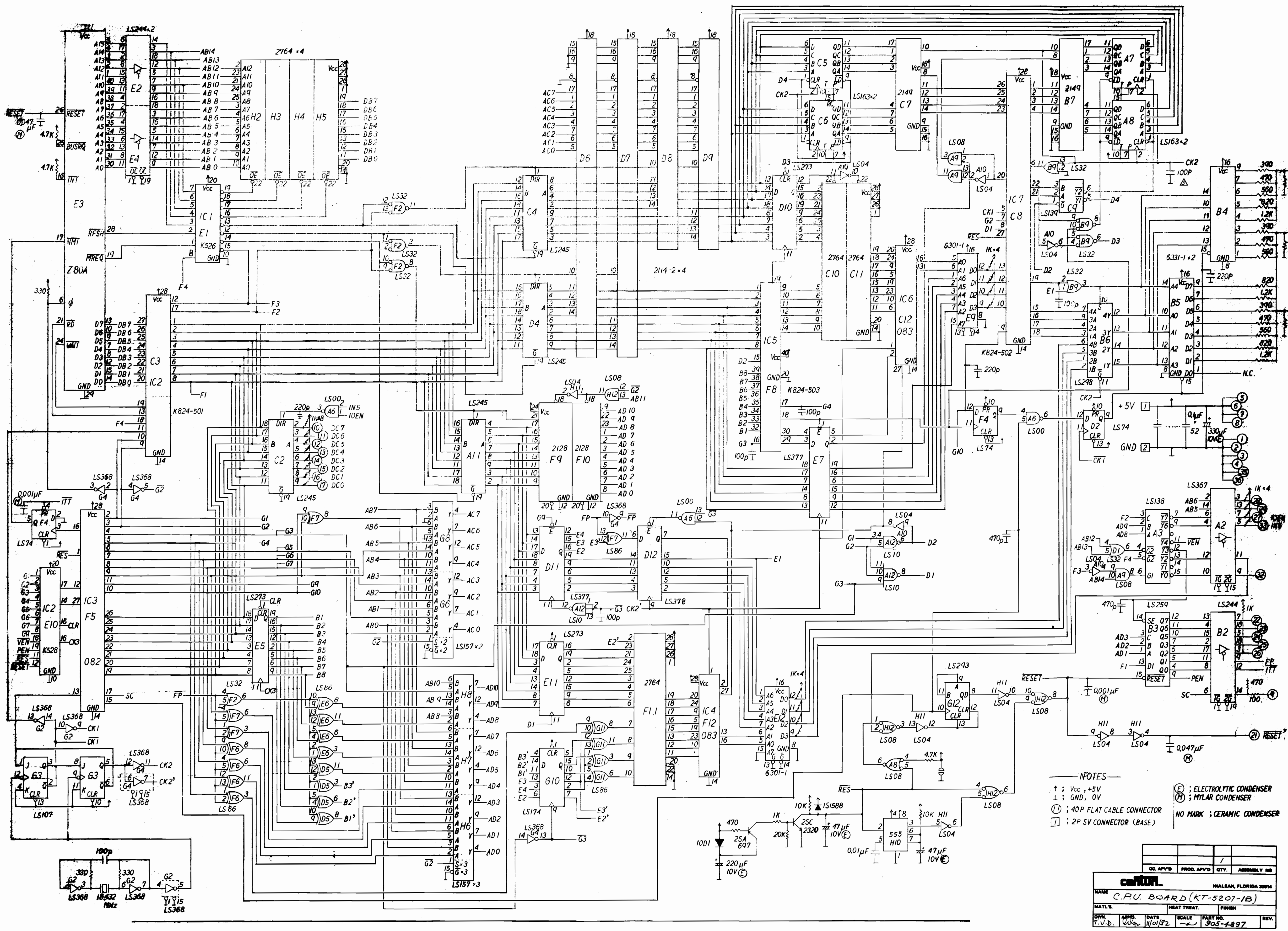
QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY NO

centuri inc — HIALEAH, FLORIDA 33014

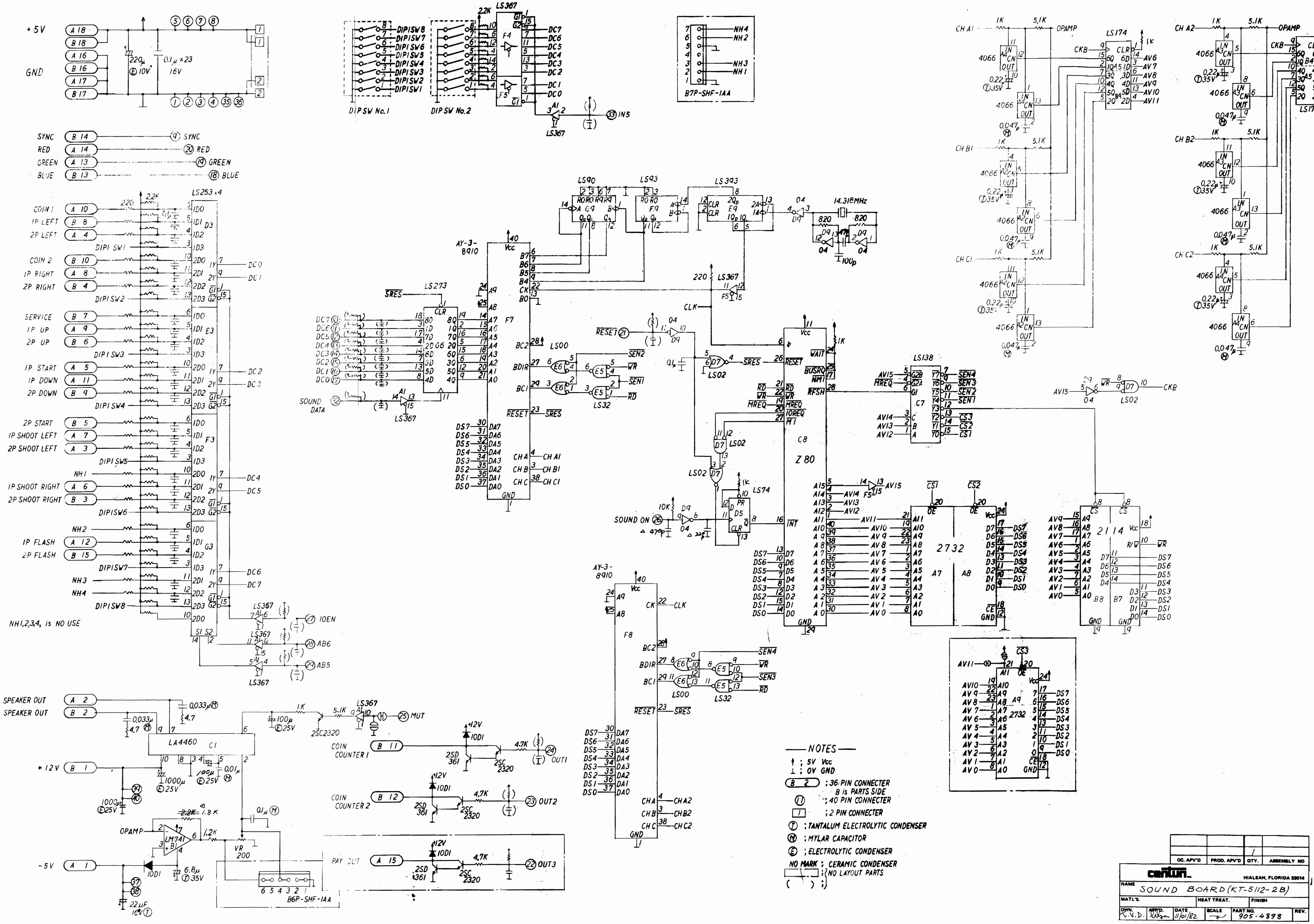
NAME: SOUND BD. COMPONENTS LAYOUT

MATL'S.	HEAT TREAT.	FINISH

DWN.	APP'D.	DATE	SCALE	PART NO.	REV.



NOTES
↑ ; Vcc , +5V
⊥ ; GND, 0V
Ⓘ ; 40P FLAT CABLE CONNECTOR
Ⓘ ; 2P SV CONNECTOR (BASE)
Ⓔ ; ELECTROLYTIC CONDENSER
Ⓜ ; MYLAR CONDENSER
NO MARK ; CERAMIC CONDENSER
QC. APV'D
PROD. APV'D
QTY.
ASSEMBLY NO
cartoon
HIALEAH, FLORIDA 33014
NAME
C.P.U. BOARD (KT-5207-1B)
MAT'L'S.
HEAT TREAT.
FINISH
DWN. T.V.D.
APPD.
DATE 11/01/82
SCALE
PART NO. 905-4897
REV.


+5V
GND
LS253 ×4
LS367
DIP SW No.1
DIP SW No.2
B7P-SHF-1AA
LS90
LS93
LS393
14.318MHz
AY-3-8910
LS273
LS00
LS32
LS02
LS74
Z80
LS138
2732
2114
LS174
4066
LA4460
LM741
B6P-SHF-1AA
SOUND ON
SOUND DATA
SPEAKER OUT
COIN COUNTER 1
COIN COUNTER 2
PAY OUT
NH1,2,3,4, is NO USE
NOTES
5V Vcc
0V GND
36 PIN CONNECTER B is PARTS SIDE
40 PIN CONNECTER
2 PIN CONNECTER
TANTALUM ELECTROLYTIC CONDENSER
MYLAR CAPACITOR
ELECTROLYTIC CONDENSER
NO MARK ; CERAMIC CONDENSER
NO LAYOUT PARTS
centuri HIALEAH, FLORIDA 33014
SOUND BOARD (KT-5112-2B)
11/01/82
905-4898

Centuri, Inc. • 245 W. 74th Place • Hialeah, Florida 33014
Telephone: 305-558-5200 • Telex: 803694 • ANSB Centuri
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